1904MNRAS..64R.295.

Major-General **William Henry Wardell**, R.A., was the eldest son of Major W. H. Wardell, of the 66th (Berkshire) Regiment and the 93rd Highlanders. He was born in 1838 at Halifax, Nova Scotia. In 1855 he obtained a commission in the Royal Artillery. While a subaltern he served with a detachment of Royal Artillery, which landed Colonel M'Crea for the protection of Europeans at Port au Prince during the revolution in Hayti in January 1859, which ended the reign of the Emperor Faustin. He was for some time an instructor in mathematics at the Royal Military Academy, Woolwich. Later he held the post of assistant-superintendent of the Royal Gunpowder Factory at Waltham Abbey. In 1882, while colonel commanding the artillery in the Windward Islands, he was wrecked with some troops off Barbados. For his coolness and courage on this occasion, which materially assisted in the safe landing of all on board, he received the thanks of the Commander-in-Chief. In 1886 he retired from the service with the honorary rank of Major-General.

General Wardell was the author of *Notes on Gunpowder* and of the article on "Gunpowder" in the *Encyclopædia Britannica*, where he gave an interesting historical account as well as a technical treatment of the subject. He occasionally contributed articles on kindred subjects to scientific reviews. In 1874 he was chosen to observe the transit of *Venus* from the island of Rodriguez, but was prevented from doing so by his military duties. He became a Fellow of the Society on the 14th of January 1876.

General Wardell died on the 24th of July 1903, at his residence, Sparkford Lodge, Winchester, leaving a widow and several children.

William Livingstone Watson was born at Kinross in 1835, and was educated at the Universities of Edinburgh and Glasgow. He entered on a mercantile career in Glasgow in 1855, joining Messrs. James Finlay & Co., a firm of East India merchants. He was a partner in this firm for twenty years, retiring in 1890. From 1876 to 1890 he represented the firm in London. He was for fifteen years chairman of the London Board of the Royal Insurance Company, for some time the Merchants' Marine Insurance Company, and of the Agra Bank, a director of the Indo-China Steam Navigation Company, the Assam-Bengal Railway, the Clan Line of Steamers, and several Indian Sea Companies.

Mr. Watson was a man of very varied interests, and was a Fellow of the Royal Geographical Society and the Society of Antiquaries, as well as of the Royal Astronomical Society. He had at his Scottish residence at Ayton, Abernethy, Perthshire, a 12-inch refractor. This instrument was exhibited at the Great Exhibition in 1851, and was then one of the largest in Great Britain.

Mr. Watson also found time to take an active part in the local

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1904MNRAS..64R.295.

affairs of Perthshire, being a J.P., a member of the County Council, and chairman of two School Boards. He was interested in the working of the Gothenburg system and endeavoured to introduce it into this country.

Mr. Watson was elected a Fellow of this Society on the 8th of January 1892. He married in 1878, and leaves one son. He died on the 19th of May 1903 at his house in Scotland.

MATHIEU-PROSPER HENRY was born at Nancy on the 10th of December 1849. He and his brother Paul went to Paris in 1864, where they became assistants in the meteorological service of the Observatory, Paul in 1864 and Prosper in 1865. They were appointed assistant astronomers in 1868. In their lodgings at Neuilly they succeeded in making a 12-inch mirror and began the construction of an ecliptic chart. When this was brought to Delaunay's knowledge he transferred them from the meteorological to the astronomical side of the Observatory, and on the 1st of July 1871 put them in charge of the "Equatorial du Jardin." They took up the work begun by Chacornac in 1852, interrupted by his death, of constructing charts which should give all the stars down to the thirteenth magnitude in the zone of the ecliptic. Each chart is thirteen inches square, and covers a field of five degrees square, so that seventy-two are required to complete the belt. Chacornac had completed thirty-six of the charts, containing about 60,000 stars. By 1884* the brothers Henry had completed sixteen charts, with 36,000 stars, and nearly finished four more with 15,000 stars. The annual reports of the Director of the Paris Observatory show the progress of the work, and give an idea of the arduous toil and the perseverance of the two brothers. In the course of their work they discovered no less than fourteen minor planets, the first of these, *Liberatrix* (125), being discovered in September 1872. They also made observations of the satellites of *Uranus* and *Neptune*, and sketches of the planets at each opposition. In the winter of 1882 they went to the Pic du Midi to observe the transit of *Venus* from a height of near 10,000 feet at considerable risk to their lives, owing to avalanches. On the day of transit, the 6th of December, the sky was covered with clouds.

As the region of the charts approached the Milky Way the difficulties arising from the large number of stars (15,000 to 18,000 on one chart) made visual observations almost impossible even for observers of their skill and experience. They accordingly determined to try photography, with which Rutherford in America and Common in England had already obtained excellent results, and especially in view of the large number of faint stars shown on Dr. Gill's photograph of the Great Comet of 1882. They first made an object-glass of six and a half inches aperture, and seven feet focal length, achromatised for photographic rays.

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* *Comptes Rendus*, t. xcix. p. 305.

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